

(12) UK Patent Application (19) GB (11) 2 317 257 (13) A

(43) Date of A Publication 18.03.1998

(21) Application No 9619223.2

(22) Date of Filing 13.09.1996

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(51) INT CL⁶

G07G 1/14, G06F 17/60

(52) UK CL (Edition P)

G4T TBA

(56) Documents Cited

US 5377095 A

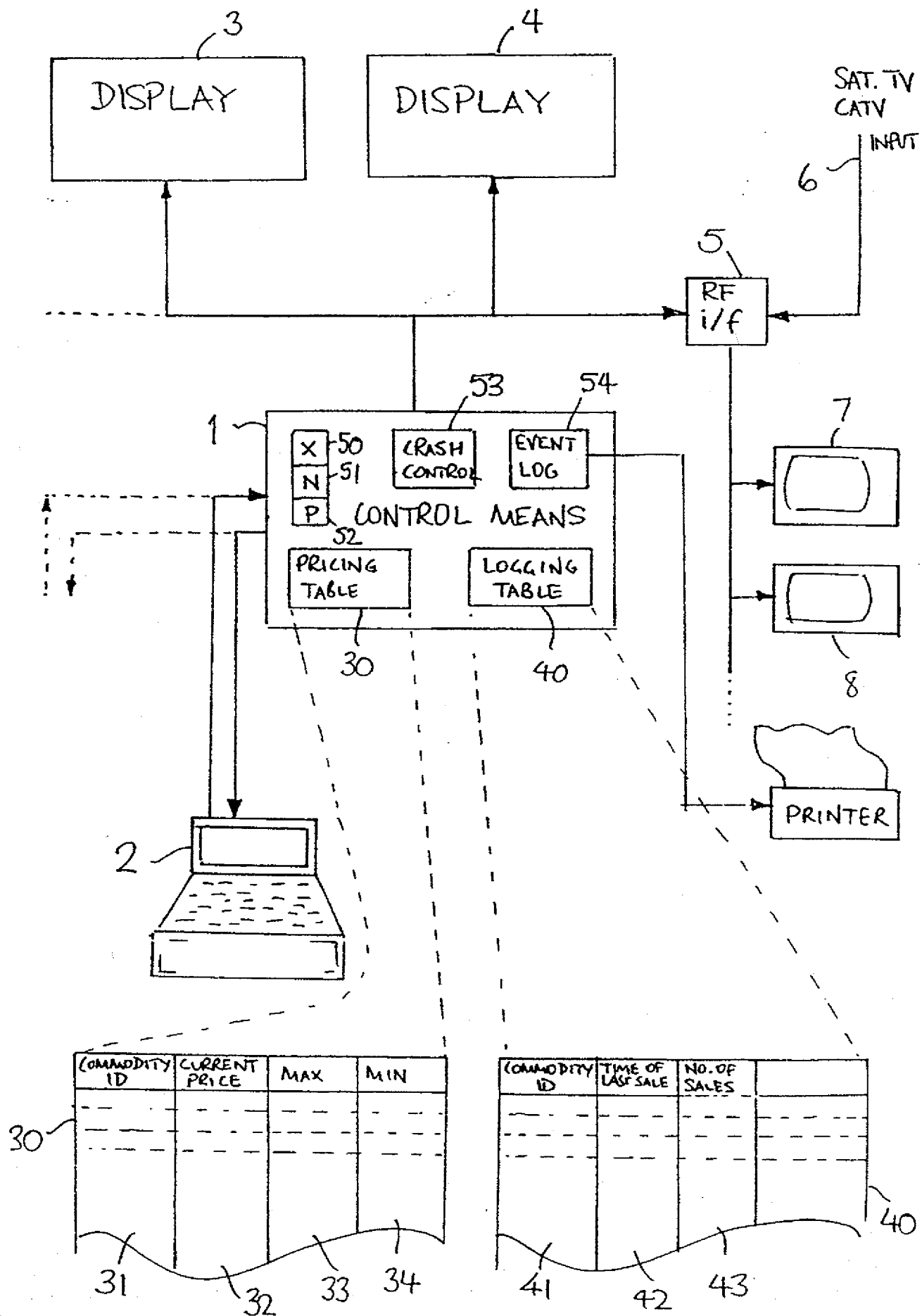
(58) Field of Search

UK CL (Edition O) G4T TBA TBX
INT CL⁶ G06F 17/60, G07G 1/12 1/14
ONLINE:WPI

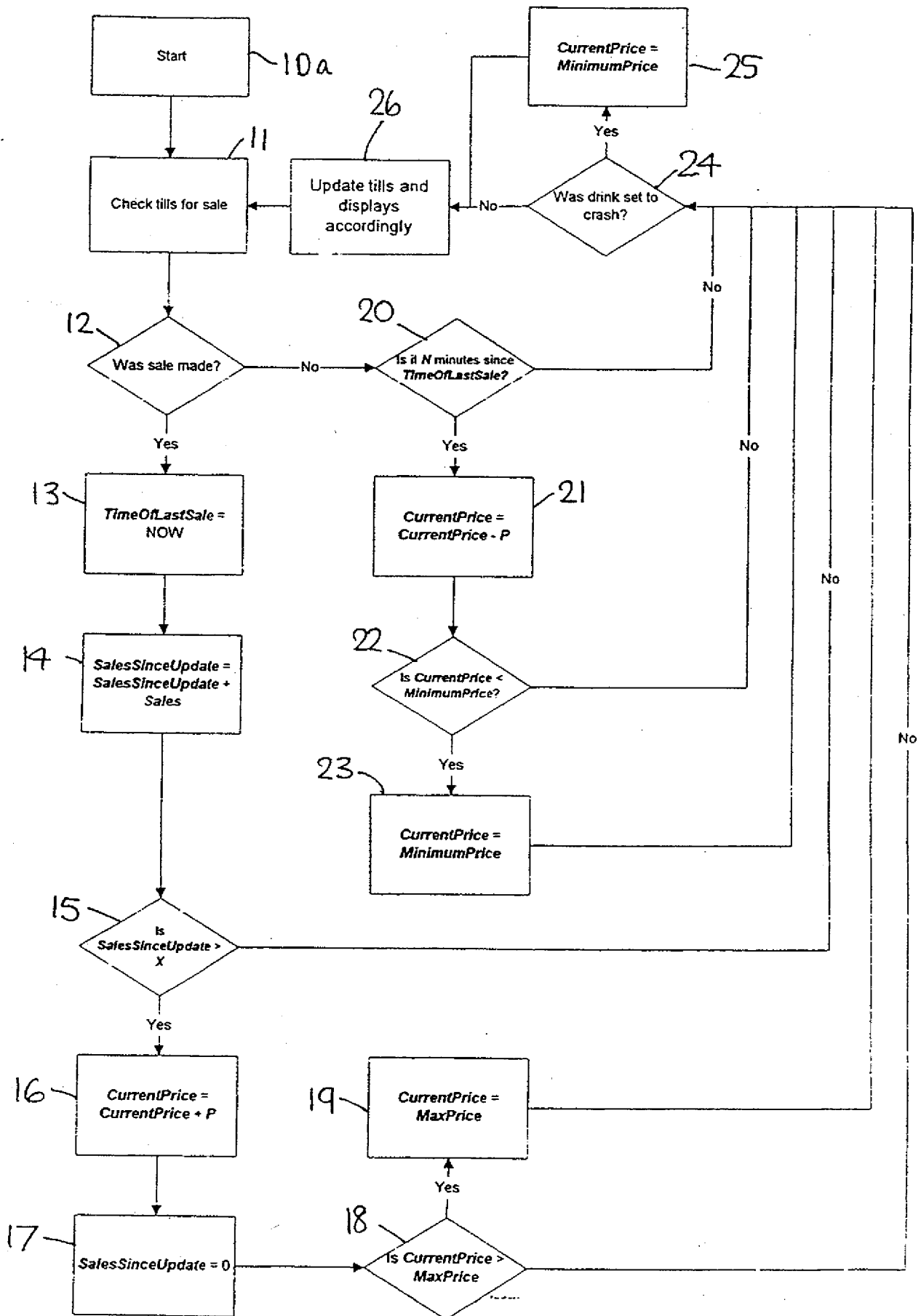
(54) Commodity pricing system

(57) An automated commodity pricing control system for use in public houses and clubs to continuously vary the price of drinks, comprises sales logging means for recording sales of a particular commodity; pricing means for determining, based on the number of sales of a particular commodity in a prior time period, a current selling price of that commodity during a subsequent time period; display means for displaying said current selling price during said subsequent time period; and till control means for varying the price charged for a particular commodity in accordance with the current selling price when a sale of that commodity is registered on a till.

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COMMODITY PRICING SYSTEM

The present invention relates to commodity pricing systems, and in particular to automated versions thereof.

5

It is known in public houses and the like to stimulate demand and increase turnover by having promotional periods during which selected drinks or all drinks are sold at a reduced price for the duration of the promotional time period, commonly referred to as "happy hour". Such promotional periods are easily administered manually by bar staff by simply having a list of drinks which are included within the promotional offer, and a fixed price reduction applied thereto for a fixed period of time.

15

According to the present invention, it has been recognized that more general market principles applied to such promotional periods will have a number of advantages over the typical happy hour. The pricing of drinks could be made continuously variable dependent upon the number of units of a particular type of drink sold in a predetermined time period.

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Thus, where a particular drink is not selling particularly well, the drink price may fall until there is more uptake on that particular drink. Where a particular drink is selling well, the drink price may rise to entice customers to sample other drinks.

25

In this way, the proprietor of a public house can exert a greater degree of control over stock levels and stock turnover, as well as provide an interesting and entertaining theme to the establishment.

Such a system would, however, be difficult if not impossible to manage effectively by the bar staff manually, while providing the necessary degree of control of and display of pricing information.

5 The present invention seeks to address these problems by providing an automated control system for regulating a commodity price based on user demand. In a general aspect, the present invention provides the system by logging sales of a particular commodity, determining a current
10 selling price of the commodity based on the number of sales of that commodity in a prior time period, and displaying the current selling price automatically. Preferably, the system provides control means for transaction processing equipment such as cash registers or tills, to vary the price charged at that transaction processing equipment when a sale of the commodity is registered thereon.

15

In accordance with one aspect, the present invention provides an automated commodity pricing control system comprising:

sales logging means for recording sales of a particular commodity;
pricing means for determining, based on the number of sales of a
20 particular commodity in a prior time period, a current selling price of that commodity during a subsequent time period;

display means for displaying said current selling price during said subsequent time period; and

till control means for varying the price charged for a particular
25 commodity in accordance with the current selling price when a sale of that commodity is registered on a till.

In accordance with another aspect, the present invention provides a method of automatically controlling the price of commodities on sale in
30 a retail establishment including the steps of:

logging on a till sales of a particular commodity;

determining, by a pricing control means, a current selling price of that commodity based on the number of sales of that particular commodity in a prior time period;

5 displaying said current selling price during a subsequent time period; and

controlling the price charged by a till for that particular commodity in accordance with the current selling price when a sale of that commodity is registered on the till.

10

Embodiments of the present invention will now be described, by way of example, and with reference to the accompanying drawings in which:

15 Figure 1 shows a schematic block diagram of apparatus according to the present invention; and

Figure 2 shows a flow diagram of the procedure carried out by the pricing control means of figure 1.

20

With reference to figure 1 there is shown an automated commodity pricing control system according to the present invention, suitable for installation into the bar of a public house or the like. The automated commodity pricing control system comprises a central controller or control means 1 which may be a suitably programmed computer. The control means 1 is coupled to a till or cash register 2 which may be one of several tills 2 coupled to the control means 1. The expression "till" is intended to encompass all forms of transaction processing equipment normally used to register and process a transaction at a point of sale.

30

The control means 1 is also coupled to at least one electronic display board 3 or 4, although multiple displays are preferred in a large buildings with separate lounges, bars etc. The display boards may be of a number of known types, such as large dot matrix displays, CRT
5 monitors or the like. In addition, or instead, the system could include an interface to a cable or satellite television system already installed in the public house. In this case, the commodity pricing system includes an RF interface 5 for multiplexing the output of the control means 1 with a satellite, CATV or video juke box input 6, for passing display signals to
10 a television monitor or monitors 7, 8.

With reference also to figure 2, the operation of the automated commodity pricing system will now be described. From initial start-up conditions 10a, the system enters a continual loop 10 which is applied for
15 each commodity, eg. drink, which is on sale and which is included within the promotional activity applied by the pricing system. Those skilled in the art of computer programming will understand that there are a number of ways in which the program loops 10 can be implemented consecutively and continuously in respect of a number of different commodities and to
20 serve a number of tills by using time multiplexing and/or interrupt servicing techniques well known in the art.

In respect of a commodity, the control system first checks for a sale of that commodity (steps 11 and 12). If a sale has been recorded, the time
25 of this last sale is stored as the current time (step 13), and the number of sales since the last update is incremented (step 14) with the new sale (which may include more than one commodity unit, for example, where a till records two or three identical drinks sold in a single transaction.

The control system then checks (step 15) to see whether the number of unit sales of that commodity exceeds a predetermined number X which is the minimum number of sales to trigger an increase in the price of that commodity. If the number X has not been exceeded, the control system
5 makes no changes to the price of that commodity and returns to checking the tills for further sales. If, however, the number X has been exceeded, then the system increases the current selling price of that commodity by a predetermined amount P (step 16). Although shown as an additive indexation of the current selling price, the price increase could also be
10 multiplicative if required. Upon increasing the current selling price in step 16, the number of sales since update is reset to zero (step 17).

If a maximum price or ceiling on the drink selling price is to be imposed, the system may include steps 18 and 19 which check to see
15 whether a maximum price has been exceeded, and if so, limits the current price to the maximum price for that commodity, before returning to step 11 for checking the tills for further sales.

To effect commodity price decreases, in step 12, if the system
20 detects no sale of the particular commodity, it checks the time period elapsed since the time of the last sale of that commodity to see whether a predetermined time period N has elapsed (step 20). If not, the system makes no changes to the price of that commodity and returns to checking the tills for further sales. If, however, the time period since the last sale
25 of that commodity has exceeded N, the current selling price is reduced by a predetermined amount P (step 21). Although shown as a subtractive change to the current selling price, it will be understood that the decrease could be on a percentage decrease basis, if required.

If a minimum price or floor on the drink selling price is to be imposed, the system may include steps 22 and 23 which check to see whether a minimum price has been reached, and if so, limits the current price to the minimum price for that commodity, before returning to step
5 11 for checking the tills for further sales.

In each case after a price update, the system updates the display boards 3, 4, 7, 8 with the new current selling price (step 26) and also issues till control instructions which implement that new selling price at
10 the tills.

A further aspect of the system may be deployed to provide an entertaining unpredictability to the system, and as an attraction to customers at the public house. In this aspect, additional steps 24 and 25
15 effectively override the current calculated selling price of a commodity by determining whether a price crash should be implemented (step 24), and if so, setting the current selling price to the minimum level or other suitable level (step 25).

20 The determination of when or whether to implement a price crash may be made by a random number generator, or may be determined in accordance with a more complex formula which takes into account all commodities currently being sold.

25 With further reference to figure 1, the control means 1 implements the flowchart of figure 2 in respect of each commodity, for example, by maintaining in memory a pricing table 30 having a current selling price 32, maximum selling price 33 and minimum selling price 34 recorded against each commodity identification code 31, and maintaining a sales

logging table 40 recording a time of last sale 42 and a number of sales since last update 43 against each commodity identification code 41.

5 The control means 1 also includes memories 50, 51 and 52 for each of the preset parameters, X (the minimum number of sales to trigger a price increase), N (the minimum time period following the last sale before a price decrease is implemented) and P (the amount of a price increase or decrease).

10 Although these parameters have been described as applying globally to all commodities in the system, it will be understood that each commodity could have independent parameter values by maintaining these parameter values in the table 40 as additional columns.

15 The control means also includes a crash controller program 53 for determining control input to decision box 24 (figure 2).

The display boards 3, 4 include a continuous list of commodity prices but may also include highlights by colour, flashing display and the
20 like, to indicate a price crash or price fall. Television monitors 7, 8 may be switched to continuous price displays, intermittent price displays or may interrupt other program material only to display price falls etc.

It will be understood that although the system described herein is
25 preferred for use in the pricing of drinks in public houses and clubs, the pricing of other commodities in other retail outlets is not precluded.

The automated commodity pricing system ensures that the tills of an establishment are properly controlled to implement a correct drink price
30 when adding up the total cost of a whole transaction which includes the

prices of a number of drinks. Preferably, the control system ensures that all identical drinks charged for in a single transaction are effected at the same price even where the total number purchased in the transaction takes the number of sales past its threshold, X.

5

The operators of the tills need not be aware of the current price prevailing at the time of a transaction as this can be automatically implemented by the till where commodity-specific keys are used or commodity codes are entered to indicate the sale of each particular commodity. Thus operator errors resulting in incorrect charging can be reduced or eliminated.

The automated commodity pricing system may also include an event log 54 coupled to a printer output 60 which can be used to record and provide hard copy of transaction times and prices together with analysis information.

Although the system has been described with a single control means 1 which services a number of tills, it will be understood that a number of microprocessors provided at each till and using a central database could also be used to implement the invention.

By appropriate selection of the operating parameters of the system, a proprietor may be sure that even where minimum price levels are below cost price, losses can never be sustained because prices are automatically raised in response to a demand.

CLAIMS

1. An automated commodity pricing control system comprising:
sales logging means for recording sales of a particular commodity;
5 pricing means for determining, based on the number of sales of a particular commodity in a prior time period, a current selling price of that commodity during a subsequent time period;
display means for displaying said current selling price during said subsequent time period; and
10 till control means for varying the price charged for a particular commodity in accordance with the current selling price when a sale of that commodity is registered on a till.
2. An automated commodity pricing control system according to claim
15 1 adapted to control the pricing of a plurality of commodities independently.
3. An automated commodity pricing control system according to claim
1 or claim 2 including means for determining a maximum and a minimum
20 selling price of any commodity.
4. An automated commodity pricing control system according to any preceding claim in which the sales logging means comprises a till.
- 25 5. An automated commodity pricing control system according to any preceding claim in which the pricing means includes:
means for determining if no items of a particular commodity have been sold within a predetermined time period; and
means for reducing the current selling price of that commodity in
30 response thereto.

6. An automated commodity pricing control system according to any preceding claim in which the pricing means includes:
means for determining if greater than a predetermined number of items of a particular commodity have been sold within a predetermined
5 time period; and
means for increasing the current selling price of that commodity in response thereto.
7. An automated commodity pricing control system according to any
10 preceding claim in which the display means includes means for highlighting a commodity for which a price has recently changed.
8. An automated commodity pricing control system according to any preceding claim in which the display means includes a large screen
15 monitor of a television or video juke box system.
9. An automated commodity pricing control system according to any preceding claim further including at least one till having a plurality of commodity-specific user keys, each key adapted to record the sale of a
20 particular commodity, in which the till control means is adapted to control the commodity price recorded by the till, during any transaction, according to the current selling price of the commodity.
10. An automated commodity pricing control system according to any
25 preceding claim further including price crash means for overriding a current selling price of a particular commodity at times according to a predetermined formula or randomly.
11. A method of automatically controlling the price of commodities on
30 sale in a retail establishment including the steps of:

logging on a till sales of a particular commodity;

determining, by a pricing control means, a current selling price of that commodity based on the number of sales of that particular commodity in a prior time period;

5 displaying said current selling price during a subsequent time period; and

 controlling the price charged by a till for that particular commodity in accordance with the current selling price when a sale of that commodity is registered on the till.

10

12. An automated commodity pricing control system substantially as described herein and with reference to the accompanying drawings.

13. A method of automatically controlling the price of a commodity
15 substantially as described herein with reference to the accompanying drawings.



Application No: GB 9619223.2
Claims searched: All

Examiner: Mr. G. Nicholls
Date of search: 20 December 1996

Patents Act 1977
Search Report under Section 17

Databases searched:

UK Patent Office collections, including GB, EP, WO & US patent specifications, in:

UK Cl (Ed.O): G4T (TBA TBX)

Int Cl (Ed.6): G07G 1/12 1/14 G06F 17/60

Other: ONLINE : WPI

Documents considered to be relevant:

Category	Identity of document and relevant passage	Relevant to claims
X	US 5377095 (MAEDA) See especially the embodiment of Figures 29 to 32	1 to 4, 11

X Document indicating lack of novelty or inventive step
Y Document indicating lack of inventive step if combined with one or more other documents of same category.

& Member of the same patent family

A Document indicating technological background and/or state of the art.
P Document published on or after the declared priority date but before the filing date of this invention.
E Patent document published on or after, but with priority date earlier than, the filing date of this application.

